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**Review of Bray, Francesca / Coclanis, Peter A. / Fields-Black, Edda L. /  
Schäfer, Dagmar: Rice. Global Networks and New Histories**

Kaufmann, Lena

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## Rezensionen – Comptes rendus – Reviews

**Bray, Francesca / Coclanis, Peter A. / Fields-Black, Edda L. / Schäfer, Dagmar (eds.):** *Rice: Global Networks and New Histories*. New York: Cambridge University Press, 2015, 446 pp., ISBN: 978-1-1070-4439-5.

Reviewed by **Lena Kaufmann**, Ethnographic Museum at the University of Zurich, Pelikanstrasse 40, 8001 Zürich, Switzerland. E-mail: [kaufmann@vmz.uzh.ch](mailto:kaufmann@vmz.uzh.ch)

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Research on the history of rice in Asia is a relatively well-established field, with Francesca Bray as one of its central scholars. Its emergence has been closely linked to the questions of (under)development in the 1960s and 70s posed by Clifford Geertz about Java, and Sir Joseph Needham and Mark Elvin about China.<sup>1</sup> Furthermore, the subject of Asian rice research was developed somewhat earlier than rice research on the Atlantic.<sup>2</sup> It is notable that these two regional research areas had never intersected until, in a truly historical event, scholars from both fields met for the first time in 2011, at a workshop entitled “The New Histories of Rice”, held at the Max Planck Institute for the History of Science in Berlin. The workshop was convened by the four editors of this volume: Francesca Bray from the University of Edinburgh, who is well-known for her work on the development of Asian rice economies, Peter A. Coclanis from the University of North Carolina, famous for his work on the rice economy of the South Carolina low country, Edda L. Fields-Black from Carnegie Mellon University, a specialist in early and pre-colonial African history and the African diaspora, and Dagmar Schäfer, Director of Department 3: “Artefacts, Knowledge, and Action” at the Max Planck Institute for the History of Science in Berlin, renowned for her work on knowledge and technology in Ming China.<sup>3</sup> The workshop was a pivotal encounter that created a real stir amongst the community of rice researchers, who have been waiting for this publication ever since. Four years later, *Rice: Global Networks and New Histories* emerged from this encounter, a volume that contains contributions by some of the most distinguished scholars of the history of rice. Embedding rice into the global history of capitalism, the contributions address various aspects of

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<sup>1</sup> Geertz 1963; Needham 1969; Elvin 1973. Here one should also mention Karl August Wittfogel’s concept of ‘oriental despotism’, which he linked to large-scale irrigation works, and which has influenced debates in the field substantively. Wittfogel 1957; see also introduction by Bray 2015: 11.

<sup>2</sup> For early works, see e. g. Littlefield 1981; Coclanis 1989.

<sup>3</sup> Bray 1986; Coclanis 1989; Fields-Black 2008; Schäfer 2011.

consumption, production, ideology and practice. In this way, they provide the reader with fresh multidisciplinary insights – not only around the history of the crop, but also about its present and future, reaching far beyond the realm of rice itself.

*Rice* comprises a foreword by Giorgio Riello from the University of Warwick, who is a renowned scholar of the global history of cotton and other material goods, then an introduction by Francesca Bray, and 15 chapters by individual scholars or groups of academics:

1. “Global Visions vs. Local Complexity: Experts Wrestle with the Problem of Development” by Jonathan Harwood, History of Science at the University of Manchester, known for his work on the history of plant breeding in early twentieth-century Germany;
2. “Rice, Sugar, and Livestock in Java, 1820–1940: Geertz’s Agricultural Involution 50 Years On” by Peter Boomgaard, Environmental and Economic History at the KITLV/Royal Netherlands Academy of Arts and Sciences, Leiden, well-known for his work on the economic history of Java; and Pieter M. Kroonenberg, Social Science at Leiden University, renowned for his research on data analysis and statistical methods;
3. “A Desire to Eat Well: Rice and the Market in Eighteenth-Century China” by Sui-Wai Cheung, History/Research Centre for Ming-Qing Studies at the Chinese University of Hong Kong, an established scholar in the field of market integration in eighteenth-century China;
4. “Rice and Maritime Modernity: The Modern Chinese State and the South China Sea Rice Trade” by Seung-Joon Lee, History at the National University of Singapore, a recognised researcher in the history of food production and consumption in modern China;
5. “Promiscuous Transmission and Encapsulated Knowledge: A Material-Semiotic Approach to Modern Rice in the Mekong Delta” by David Biggs, History at the University of California-Riverside, known for his research on nation-building and nature in the Mekong Delta;
6. “Red and White Rice in the Vicinity of Sierra Leone: Linked Histories of Slavery, Emancipation, and Seed Selection” by Bruce L. Mouser, History at the University of Wisconsin–La Crosse, acknowledged expert in the field of African and African-American history; Edwin Nuijten from the Louis Bolk Institute, Driebergen, Netherlands, recognised for his work on plant breeding and sustainable production chains; Florent Okry from the National University of Benin, Cotonou, a respected scientist and co-ordinator of agricultural R&D projects; and Paul Richards, Technology and Agrarian Development at Wageningen University, a renowned anthropologist of agricultural technology in West Africa;

7. “Rice and Rice Farmers in the Upper Guinea Coast and Environmental History” by co-editor Edda L. Fields-Black;
8. “Reserving Water: Environmental and Technological Relationships with Colonial South Carolina Inland Rice Plantations” by Hayden R. Smith, History at the College of Charleston, known for his historical studies of the South Carolina low country;
9. “Asian Rice in Africa: Plant Genetics and Crop History” by Erik Gilbert, History at Arkansas State University, Jonesboro, known for his historical economic research on East Africa;
10. “When Jola Granaries Were Full” by Olga F. Linares from the Smithsonian Tropical Research Institute, Panama City, a renowned anthropologist of the cultural ecology of Panama and Casamance, Senegal;<sup>4</sup>
11. “Of Health and Harvests: Seasonal Mortality and Commercial Rice Cultivation in the Punjab and Bengal Regions of South Asia” by Lauren Minsky, History at New York University–Abu Dhabi, known for her interdisciplinary historical research on the Indian Ocean world;
12. “The Cultural Meaning of Work: The ‘Black Rice Debate’ Reconsidered” by Walter Hawthorne, History at Michigan State University, East Lansing, acknowledged for his historical work on West African rice and slavery;
13. “White Rice: The Midwestern Origins of the Modern Rice Industry in the United States” by co-editor Peter A. Coclanis;
14. “Rice and the Path of Economic Development in Japan” by Penelope Francks from the School of Oriental and African Studies, London, an expert on rural economic development in Japan;
15. “Commodities and Anti-Commodities: Rice on Sumatra 1915–1925” by Harro Maat, Knowledge, Technology and Innovation at Wageningen University, who is known, *inter alia*, for his work on the history of agricultural science in the Netherlands and its former colonies.

The chapters are arranged – thematically, not regionally or chronologically – in three parts:

Part I: “Purity and promiscuity” contains Chapters 1–6. It relates to the strategies and complex interplay of maintaining or breeding specific rice varieties, be it “[...] as commodity, as food, and as symbol of national strength and modernity”.<sup>5</sup> Part II: “Environmental matters” comprises Chapters 7–11. It refers mainly to the natural environment and to “[...] the ways that rice-growing societies

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<sup>4</sup> Since Olga F. Linares passed away in 2014, this is one of her final works. Smithsonian Tropical Research Institute, Panama 2014.

<sup>5</sup> Bray 2015: 40.

have adapted the crop to their environment and adapted their environment to the crop”,<sup>6</sup> often in the framework of specific encounters between different, unequal societies and land use systems. According to Fields-Black, the contributions in this section have been particularly challenged by the lack of historical data on environmental history.<sup>7</sup> In response to this, they introduce stimulating interdisciplinary sources and methods that may contribute to the historical study of the natural environment. Part III: “Power and control” includes Chapters 12–15. Power and control are themes that have been overarching in the history of rice (and therefore would apply to the other chapters as well), especially regarding wet rice cultivation, with its particular requirements for water management and sizeable demands for skilled labour. The chapters in the third part tackle both faces of power and control: domination and resistance. They do so, for example, in contexts of slavery, colonisation, and under specific market conditions.

As Francesca Bray states in her introduction, the three organising themes are usually perceived as “[...] conceptual bridges to disciplines currently setting trends in global history, respectively: the history of science, environmental history, and studies of governmentality”.<sup>8</sup>

Each part includes an additional introductory chapter, written by the co-editors. The book ends with a detailed bibliography and an index. There is no joint conclusion; however, this is not a major omission, given the comprehensive and analytical introductory sections.

I will first remark on the book’s structure. As is usual in an edited volume, the combined bibliography contains a wealth of different bodies of literature, arranged alphabetically. For example, the historical sources listed range from personal memoirs, colonial records, gazettes, bulletins, official registers and directories, slaver’s log books, deed books and demographic statistics to agricultural and health reports from various government bodies – to name just a few. Most of the literature quoted is in English, although some are given in other languages, notably Chinese and Japanese, as well as former colonial power languages such as Dutch, French and Portuguese. The volume is generally extremely well copy-edited, with only few spelling or bibliographical mistakes, such as an article by Gonçalo D. Santos,<sup>9</sup> which is mistakenly cited under the name of a different author. Finally, there are three highly informative overview maps at the beginning of the volume, about rice in Asia, in Europe and Africa, and in Africa and the Americas. These contain data from several contributions,

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<sup>6</sup> Fields-Black 2015: 163.

<sup>7</sup> Fields-Black 2015: 165.

<sup>8</sup> Bray 2015: 4.

<sup>9</sup> Santos 2011.

for example regarding the geographic distribution of rice varieties, or imports and exports. Moreover, there are several instructive maps and graphics in individual contributions. However, if updated for a second edition, the book might benefit from the addition of maps in some of the chapters that lack any images, to aid comprehension of the complex micro-histories of some regions and local societies that readers may be less familiar with, e. g. in West Africa.

With regard to its content, *Rice* is highly ambitious in being the first volume ever to attempt to write a global and comparative history – or rather histories – of rice. Obviously, as Riello acknowledges in his foreword, a singular global history of rice would be too complex to be truly comprehensive. Therefore, the volume focuses on the past 400 to 500 years of rice cultivation, a time frame bounded by the “discovery” of the Americas<sup>10</sup> and by colonial and capitalist expansion.<sup>11</sup> Moreover, because it would not be feasible for the book to cover every single rice-growing area in the world, it focuses on some of the main rice-growing regions in the Americas, West Africa, and Asia. The editors are well aware that this can only be a work in progress, generating new and exciting questions and directions to be followed by future research in the field.<sup>12</sup> As Bray states in her introduction, “[...] the regional histories of rice as crop, as food, and as commodity have been inextricably entangled with the emergence of the early-modern world economy and with the global networks and commodity flows of industrial capitalism”.<sup>13</sup>

Nevertheless, the book provides a stimulating departure from previous rice historians, who have mainly focused on their own geographic areas of research and engaged in their own related debates. Historians of Asia acknowledge Bray for contributing to this field with at least two books, the volume on *Agriculture* in Joseph Needham’s impressive book series *Science and Civilisation in China*, and *The Rice Economies: Technology and Development in Asian Societies*.<sup>14</sup> In this, she argued that China did not stagnate after the Song period, but instead followed its own distinctive path of economic development.

In contrast, the “black rice thesis” has dominated the debate of Atlantic historians. This debate is headed by scholars such as Littlefield and Carney (who have not contributed chapters to the volume under review), as well as their critics, such as the co-editor Coclans and Eltis et al.<sup>15</sup> This debate centres

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10 Riello 2015: xiv.

11 Bray 2015: 3, 9.

12 Bray 2015: 5.

13 Bray 2015: 2.

14 Bray 1984, 1986.

15 Littlefield 1981; Carney 2001; Coclans 2002; Eltis et al. 2007. The latter did not contribute chapters to the volume under review.

around the highly-contested question of the role and scope of socio-technical knowledge which was held by West African slaves in rice plantation schemes in the Americas, especially in the southern United States and among Maroons in Brazil. The question was how far risiculture in the Americas would have been possible without slaves' knowledge and skills. The discussion tackles "[...] big issues about knowledge, inequality, power, and the sources of wealth [...]", perceiving rice farming as an essential component of the emergence of a modern capitalist economy.<sup>16</sup>

This is a debate which scholars of Asia will find surprising, because rice research in densely-populated Asian regions has tended to focus on the much-disputed question of "agricultural involution", which Geertz posited in regard to Java,<sup>17</sup> or "growth without development", as scholars such as Elvin and Huang assert about early-modern China.<sup>18</sup> This Asia-related thesis, in turn, refers to the intensification of rice cultivation through the absorption of high numbers of labour which, however, did not lead to substantial economic development. The Asia debate stands in contrast to the Atlantic "black rice thesis", which does not view rice as an inhibitor, but as a motor of economic development.<sup>19</sup>

Hence, bringing these two debates, their surrounding arguments and questions together in a highly-coherent edited volume, indicating cross-cutting themes as well as contradictions and tensions, and fostering an active dialogue between their respective scholars is, without a doubt, one of the great achievements of *Rice*. Engaged readers will be left stunned by this conjunction and intrigued about where this confrontation of two formerly so dominant, yet separate, debates may lead.

A further merit that results from this encounter between two opposing discourses is the wealth of different perspectives that connect both micro- and macro-levels of analysis. Rather than focusing merely on the economic history of the crop, rice is studied, juxtaposed and contrasted – if not theorised – from manifold perspectives, highlighting differences and similarities across space and time. Rice is analysed from very different, often intersecting points of departure, such as

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<sup>16</sup> Bray 2015: 10.

<sup>17</sup> Geertz 1963.

<sup>18</sup> Elvin 1973; Huang 1990.

<sup>19</sup> Bray 2015: 1, 3, 10. Japan, with its "industrious revolution" (Hayami, 1992; his earlier publications from the 1960s are in Japanese) was long perceived as a special case, see Chapter 14 by Penelope Francks.

production,<sup>20</sup> consumption,<sup>21</sup> the knowledge, skill and agency of its cultivators,<sup>22</sup> science and technology,<sup>23</sup> the ideological as well as the practiced realms,<sup>24</sup> the state,<sup>25</sup> the market,<sup>26</sup> and the individual.<sup>27</sup> Together, the histories resulting from these various notions highlight the complexity of rice as a crop, as well as its multifaceted historical trajectories, their conjunctions and divergences, and the multiple agents involved. By way of presenting many in-depth, often empirical micro-level examples that emphasise their own local logics, the volume draws a complex picture that weaves together a range of different topics. Hereby, it effectively evades the pitfalls of Western ethnocentrism or simple dualistic models. At the same time, each contribution itself challenges prevailing narratives, for example, about the benefits of intensified agricultural production in British India,<sup>28</sup> or the inefficiency of shifting cultivation in Sumatra.<sup>29</sup> Last but not least, the publication as a whole also challenges the meta-narrative that writing a global history should be linear and uniform, and should depart from any large-scale historical analysis.<sup>30</sup>

Most of the chapters do not explicitly focus on global issues, but on one aspect that eventually involves various regions, such as the flow of seeds between West Africa and Brazil.<sup>31</sup> Nevertheless, since markets, consumer needs, quests for development, and flows of rice seeds ultimately connect local producers to international endeavours and connect the local to the global level and, despite the case study approach of many chapters,<sup>32</sup> the book does not lose sight of overarching global issues, such as the role of international markets,<sup>33</sup> issues of (anti)commodification,<sup>34</sup> or agricultural modernisation.<sup>35</sup>

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20 E. g. Chapter 8 by Smith, and Chapter 10 by Linares.

21 E. g. Chapter 3 by Cheung.

22 E. g. Chapter 6 by Mouser et al.

23 E. g. Chapter 5 by Biggs, and Chapter 8 by Smith.

24 E. g. Chapter 1 by Harwood.

25 E. g. Chapter 4 by Lee.

26 E. g. Chapter 3 by Cheung.

27 E. g. Chapter 4 by Lee, and Chapter 13 by Coclanis.

28 Chapter 11 by Minsky.

29 Chapter 15 by Maat.

30 Riello 2015: xvii–xviii.

31 Chapter 9 by Gilbert.

32 E. g. Chapter 1 by Harwood; Chapter 4 by Lee; Chapter 10 by Linares; Chapter 12 by Hawthorne; Chapter 13 by Coclanis.

33 E. g. Chapter 2 by Boomgaard and Kroonenberg; Chapter 4 by Lee; Chapter 11 by Minsky; Chapter 13 by Coclanis.

34 Chapter 15 by Maat.

35 E. g. Chapter 1 by Harwood; Chapter 5 by Biggs; Chapter 8 by Smith.



The width of perspectives within *Rice* stems from its interdisciplinary approach and the equally multifaceted, sometimes exploratory, methods of study. The contributors are not only historians of agriculture (including Bray, Coclanis and Fields-Black), or science and technology (Harwood, Maat), but also anthropologists (Bray, Linares, Richards) and, furthermore, social scientists (Kroonenberg), scholars of area studies (Cheung, Francks), agrarian development (Okry), and plant breeding (Harwood, Nuijten). The methods applied reach far beyond classical historical research approaches, including quantitative analysis,<sup>36</sup> genetic mapping,<sup>37</sup> historical linguistics,<sup>38</sup> hydrological and topographical mappings<sup>39</sup> and ethnography.<sup>40</sup>

Although this exceptional book has provoked excitement and amazement in this reviewer, some younger academics, who have been taught the standardised framework of the current Bologna system, might not be aware of the working techniques of the preceding generation. They might, therefore, have benefited from clearer information about the sources used. Although the contributors are generally very clear about their sources and data, including their limitations, certain individual parts of the book, such as the chapters by Fields-Black and Linares, which employ linguistic and ethnographic methods respectively, could be enhanced by explaining more precisely where their data stem from as well as how, when and by whom they were collected. For example, the reader cannot know if the linguistic data presented by Fields-Black in Chapter 7 in the context of her comparative method is her own or someone else's, or when and how the empirical data on Jola rice cultivation provided by Linares in Chapter 10 came about. In a few instances, when making global claims, specifying the related sources would have been equally helpful to enable the reader to evaluate the wider context and make quantitative comparisons with other crops, e. g. claims that "rice is the second most important cereal crop globally"<sup>41</sup> or that "only about 5–7 percent of total rice production is traded internationally".<sup>42</sup>

Nevertheless, overall the wealth of sources and methods is highly inspiring. The contributors convincingly show how other disciplines may inform history and, equally, how history can enrich other disciplines. Moreover, they demonstrate the value of analysing wider historical transitions from the perspective of

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<sup>36</sup> Chapter 2 by Boomgaard and Kroonenberg.

<sup>37</sup> Chapter 6 by Mouser et al.; Chapter 9 by Gilbert.

<sup>38</sup> Chapter 7 by Fields-Black.

<sup>39</sup> Chapter 5 by Biggs; Chapter 8 by Smith.

<sup>40</sup> Chapter 10 by Linares.

<sup>41</sup> Gilbert 2015: 212.

<sup>42</sup> Coclanis 2015: 277.

material culture, in this case rice. In fact, as becomes obvious, rice does indeed provide a valid lens through which to observe the last 400 to 500 years of world history.

It is certain that a reader from a particular field of rice research and/or global history will read this book in relation to their own specific research interest and gain some relevant insights. For instance, the book is useful for my own anthropological research on contemporary Chinese rice farmers' everyday strategies. Firstly, *Rice* adds new historical insights into how the modern Chinese state tried to promote scientific farming methods, a trend that is continuing in post-Green Revolution China. In Seung-Joon Lee's case (ch. 4), the Guomindang regime showed a highly divergent understanding of rice varieties as compared to that of the "indigenous" Cantonese rice merchants. The latter had well-developed techniques for assessing the quality of rice. Importantly, the merchants took rice consumers into consideration, an aspect that the state failed to acknowledge. Here we can see a parallel to the situation in contemporary China and other places, e. g. when thinking about introducing genetically-modified golden rice in the Philippines and elsewhere. Secondly, Lee's (ch. 4) study, as well as the contribution by Sui-Wai Cheung (ch. 3), enhance the previously-understudied perspectives of the market and rice consumers to modern historical studies of rice in China. This change of viewpoint is valuable for both historical and contemporary studies of rice systems. Thirdly, the volume confirms my own findings about the skills and agency of rice farmers, which are often overlooked – not only in anthropology. Taking an empirical case-study approach reveals the admirable skills and the agency of rice farmers in astonishing ways. One example is the farmers in Sierra Leone described by Mouser et al. in Chapter 6. These local farmers had been breeding hybrid African and Asian varieties of rice even before scientific plant breeders – unaware of this achievement – started trying to introduce something similar in the framework of the top-down Nerica project. Finally, this book provides new understandings and evidence around the development of rice economies, and the connected issue of modernisation. For instance, in Chapter 2, Peter Boomgaard and Pieter M. Kroonenberg convincingly challenge Geertz's thesis about "the allegedly unlimited capacity of Java's wetrice fields [...] for almost constant intensification during the colonial period (ca. 1820–ca. 1940)", even suggesting that the term "agricultural involution" should be completely discarded.<sup>43</sup> In Chapter 14, Penelope Francks builds on insights from Bray's<sup>44</sup> influential work on the distinctive developmental patterns of rice economies to argue that "[...] the

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<sup>43</sup> Boomgaard and Kroonenberg 2015: 56.

<sup>44</sup> Bray 1986.

particular characteristics of rice, both as a consumer good and as the key determinant of rural economic and institutional structures, have to be taken into account in any analysis of Japan's long-term development path".<sup>45</sup> Significantly, this also pushes us to rethink the crucial role of rice in China and other emerging economies.

In summary, *Rice* is a highly valuable collection of up-to-date research on the global history of rice, and is a wonderful, inspiring and rewarding book to read. I am convinced that this volume will become a definitive, innovative text for future rice research in the humanities and social sciences. It is a must-read – not only for historians concerned with issues of globalisation, the economy, material culture and science and technology, but also for social scientists, scholars of area studies and – hopefully – for policy makers and agricultural scientists who have, so far, paid too little attention to local knowledge and skills in their pursuit of agricultural development and modernisation.

To conclude, what has the 2011 encounter of Asian and Atlantic rice researchers ultimately led to? In this book, it has opened up the field to fresh perspectives on emergent global networks and new histories, about rice and beyond.

## Cited Works - Bibliography

- Boomgaard, Peter / Kroonenberg, Pieter M. (2015): "Rice, Sugar, and Livestock in Java, 1820–1940: Geertz's Agricultural Involution 50 Years On". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, 56–83.
- Bray, Francesca (1984): *Agriculture. Science and Civilisation in China* 6(2). Cambridge: Cambridge University Press.
- Bray, Francesca (1986): *The Rice Economies: Technology and Development in Asian Societies*. Oxford/New York: Blackwell.
- Bray, Francesca (2015): "Part I: Purity and Promiscuity, Introduction". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, 37–40.
- Carney, Judith Ann (2001): *Black Rice: The African Origins of Rice Cultivation in the Americas*. Cambridge, MA: Harvard University Press.
- Coclanis, Peter A. (1989): *The Shadow of a Dream: Economic Life and Death in the South Carolina Low Country, 1670–1920*. New York, NY: Oxford University Press.
- Coclanis, Peter A. (2002): "Review of Carney, Black Rice". *Journal of Economic History* 62.1: 247–248.
- Coclanis, Peter A. (2015): "Part III: Power and Control, Introduction". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, 275–278.

---

<sup>45</sup> Francks 2015: 320.

- Eltis, David; Morgan, Philip D.; Richardson, David (2007): "Agency and Diaspora in Atlantic History: Reassessing the African Contribution to Rice Cultivation in the Americas". *American Historical Review* 112.5: 1329–1358.
- Elvin, Mark (1973): *The Pattern of the Chinese Past: A Social and Economic Interpretation*. Stanford, CA: Stanford University Press.
- Fields-Black, Edda L. (2008): *Deep Roots: Rice Farmers in West Africa and the African Diaspora*. Bloomington, IN: Indiana University Press.
- Fields-Black, Edda L. (2015): "Part II, Environmental Matters, Introduction". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, 163–166.
- Franks, Penelope (2015): "Rice and the Path of Economic Development in Japan". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, 318–334.
- Geertz, Clifford (1963): *Agricultural Involution: The Processes of Ecological Change in Indonesia*. Berkeley/Los Angeles, CA: University of California Press.
- Gilbert, Erik (2015): "Asian Rice in Africa: Plant Genetics and Crop History". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, 212–228.
- Hayami, Akira (1992): "The Industrious Revolution". *Look Japan* 38.436: 8–10.
- Huang, Philip C.C. (1990): *The Peasant Family and Rural Development in the Yangzi Delta, 1350–1988*. Stanford, CA: Stanford University Press.
- Littlefield, Daniel C. (1981): *Rice and Slaves: Ethnicity and the Slave Trade in Colonial South Carolina*. Baton Rouge, LA: Louisiana State University Press.
- Needham, Joseph (1969): *The Grand Titration: Science and Society in East and West*. London: Allen & Unwin.
- Riello, Giorgio (2015): "Foreword". In: *Rice: Global Networks and New Histories*. Edited by Francesca Bray et al. New York: Cambridge University Press, xiii–xviii.
- Santos, Gonalo (2011): "Rethinking the Green Revolution in South China: Technological Materialities and Human-Environment Relations". *East Asian Science, Technology and Society* 5.4: 479–504.
- Schäfer, Dagmar (2011): *The Crafting of the 10,000 Things: Knowledge and Technology in Seventeenth-Century China*. Chicago: The University of Chicago Press.
- Wittfogel, Karl August (1957): *Oriental Despotism: A Comparative Study of Total Power*. New Haven, CT: Yale University Press.

## Website

- Smithsonian Tropical Research Institute, Panama (2014): *Olga Linares (1936–2014)*. [http://www.stri.si.edu/english/about\\_stri/headline\\_news/news/article.php?id=1891](http://www.stri.si.edu/english/about_stri/headline_news/news/article.php?id=1891) (13/06/2016).